

ABSTRACT OF THE DISCLOSURE

A semiconductor memory device has an external terminal receptive of a voltage for switching an operation mode. A protective transistor is connected between the external terminal and a ground. The protective transistor has a drain region and a gate electrode surrounding the drain region. A voltage detection circuit detects a voltage of the external terminal and outputs a switching signal for switching a first operation mode to a second operation mode when a value of the detected voltage is equal to or higher than a preselected voltage value.